BERIN, A., starshiy kranovshchik

Road to mastery. Rech. transp. 21 no.3:49-50 Mr '62. (MIRA 15:4)

1. Khabarovskiy rechnoy port.
(Cranes, derricks, etc.)

Berinde, Al

RUMANIA/Fitting Out of Laboratories. Instruments, Their Theory, Construction and Use H.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4926

Author : Berinde, Al.
Inst :
Title : Dosimetry of X-Ray and Gamma Radiations

Orig Pub : Metrol. apl., 1956, 3, No 2, 10-15

Abstract : A review.

Card 1/1

SOV/133-59-3-3/32

AUTHORS: Polovchenko, I.G. and Vasil'yev, G.A., Candidates of Technical Sciences, Afanas'yev, V.N., Uzlyuk, V.N. and Berin, A.L., Engineers

TITLE: Radiometric Control of the Stock Line Level in a Blast Furnace (Radiometricheskiy kontrol' urovnya materialov v domennoy pechi)

PERIODICAL: Stal', 1959, Nr 3, pp 204 - 205 (USSR)

ABSTRACT: A description of an experimental radiometric stock level indicator is given. Its operation is based on the irradiation of the working volume of the furnace throat by two radioactive sources (Co^{60} of 500 millicurie each) and measuring of the degree of absorption of the radiation by the burden with counters (enclosed in water-cooled tubes) distributed in vertical rows from the four sides of the throat (Figures 1 and 2). This indicator was installed on a blast furnace at the Dzerzhinskiy Works and its operation was compared with the mechanical stock level indicators. It was found that in general stock level measuring rods indicate a stock level lower than the actual level of the stock in the furnace. The new stock level indicator showed clearly non-uniformity of the burden descent along the periphery of the furnace and the

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Radiometric Control of the Stock Line Level in a Blast Furnace

variability of the position of the maximum rate of the descent along the periphery. The most stable rate of burden descent was found to be at the side of the tapping hole (tuyeres over the tapping holes were of a smaller diameter) and the highest rates of descent were observed from the sides of the slag notches. The radiometric indicator was developed by the Ukrainskiy institut metallov (Ukrainian Institute of Metals) in co-operation with TsNIIChM. It is planned to produce an industrial type of the apparatus with improved recording instruments. There are 2 figures and 2 Soviet references.

Card2/2

SOV/133-59-3-6/32

AUTHORS: Polovchenko, I.G., Candidate of Technical Sciences, Afanas'yev, V.N., Uzlyuk, V.N. and Berin, A.L., Engineers

TITLE: Radiometric Control of the Size Distribution of Skip Coke (Radiometricheskiy kontrol' kuskovatosti skipovogo koksa)

PERIODICAL: Stal', 1959, Nr 3, p 211 (USSR)

ABSTRACT: During an investigation of the absorption of γ radiations by the individual components of burden materials carried out at the Dzerzhinskiy Works, it was found that the degree of absorption depends more on the bulk density of a material than on its chemical and mineralogical composition. As the bulk density of coke is related to its size distribution, TsNIIChM developed an experimental apparatus for the control of the size distribution of coke as charged into skips. One of the coke-weighing funnels is irradiated from one side with Co^{60} (activity 300 millicurie) and the counter situated on the opposite wall recorded the degree of absorption by coke of the γ radiation (Figure 1). A sample of such record is shown in Figure 2. The degree of absorption for each skip of coke is recorded. A comparison of the recorded absorption with the furnace operating indices has shown that the absorption of γ radiation by coke varied from 5 to 12.7% of the mean

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Radiometric Control of the Size Distribution of Skip Coke

value, whereupon at a minimum absorption burden load per ton of coke was 2 540 kg and at a maximum absorption it decreased to 2 210 kg/t, i.e. by 13%.
There are 2 figures and 2 Soviet references.

Card 2/2

BERIN, Aleksandr L'vovich; SHATUNOVSKIY, I.O., otv.red.; LIBERMAN, S.S., red.izd-va; ANDREYEV, S.P., tekhn.red.

[Operator of a casting machine; manual for the individual training of workers of brigades in industry] Mashinist razlivochnoi mashiny; uchebnik dlia individual'no-brigadnogo obucheniia rabochikh na proizvodstve. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 174 p. (MIRA 13:9)
(Blast furnaces--Equipment and supplies)
(Foundries--Equipment and supplies)

AFANAS'YEV, V.N., kand.tekhn.nauk; BALYUK, F.B., inzh.; BERIN, A.L., inzh.; VASIL'YEV, A.G., kand.khimicheskikh nauk; GRUZIN, P.L., doktor tekhn.nauk; KOROBEYNIK, V.F., inzh.; POLOVCHENKO, I.G., kand.tekhn. nauk; SMIRNOV, V.G., inzh.; UZLYUK, V.N.

Control of the level of the blast furnace charge by means of gamma rays. Trudy Ukr. nauch.-issl. inst. met. no.7:51-80 '61. (MIRA 14:11)

(Blast furnaces--Equipment and supplies)
(Gamma rays--Industrial applications)

POLOVCHENKO, I.G.; BERIN, A.L.

High-temperature nozzles for blast furnaces. Stal' 22 no.6: 497-498 Je '62. (MIRA 16:7)

1. Metallurgicheskiy zavod im. Dzerzhinskogo.
(Blast furnaces—Equipment and supplies)

BERIN, A.L.

Technological principles of automating the control of rotary distributors. Stal.' 22 no.12:1065-1068 D'62. (MIRA 15:12)
(Blast furnaces--Equipment and supplies)
(Automatic control)

BERINA, Dz. (Riga)

Dynamics of manganese in Latvian soils. Vestis Latv ak no.1:115-122 '60. (KRAI 9:11)

1. Latvijas PSR Zinatnu akademija, Biologijas institutus.
(Latvia--Soils) (Manganese)

BERINA D. Zh. (USSR)

"Effect of Phosphorus on Plant Uptake of Manganese and Iron"

Report presented at the 5th Int'l Biochemistry Congress,
Moscow, 10-16 Aug. 1961

BERINYA, D.[Berina, D.]

Forms and content of manganese in soils of the Latvian S.S.R. Vestis Latv ak no.5:133-138 '61.

1. Akademiya nauk Latviyskoy SSR, Institut biologii.

BERINDE, A C.

19 8

Absolute measurement of thermal neutron flux intensities. Horia Hulubei, C. Beglu, Al. Berinde, M. Ivascu, and N. Martalogu. *Acad. rep. populare Romîne, Inst. fiz. atomica si Inst. fiz. Studii cercetări fiz.* 10, 223-8(1959); cf. Locqueneux, *C.A.* 44, 5717*g*; Haenny, *C.A.* 45, 5526*c*; Mercier, *C.A.* 48, 1822*d*.—NIKFI nuclear emulsions are impregnated with $Li_2B_4O_7$, and B and Li concns. are detd. with 1% accuracy. A Ag sheet between the channel and the emulsions eliminates the resonance component. Several layers of the emulsion are successively exposed to the flux, at different time intervals *t*. The slope of the graph representing the superficial d. of the tracks due to B as a function of irradiation time, enables detn. of the abs. value of the thermal neutron flux. Accuracy achieved is 3%, and the method has been verified for neutron fluxes emerging from a reactor channel, as well as from a 1-c. Po–Be source. A new method of layer scanning enables control of the accuracy of the measurement. M. Lapidot

HULUBEI, H., acad.; MARTALOGU, N.; IVASCU, M.; BESLIU, C.; BERINDE, A.; NEAMU, I.; FRANZ, I.

Angular distribution of the protons of 6.2 MeV, elastically and nonelastically diffused on S^{32}. Studii cerc fiz 11 no.4:1023-1031 '60. (EEAI 10:8)

1. Institutul de fizica atomica, Bucuresti. 2.Comitetul de redactie, Studii si cercetari de fizica, redactor responsabil(for Hulubei).
(Angular momentum(Nuclear physics)) (Protons)
(Nuclear emulsions) (Sulfur) (Radioisotopes)

BERINDE, A.

Nuclear fluorescence of resonance. Studii cerc fiz 12 no.1:233-259 '61. (EEAI 10:9)

(Magnetic resonance absorption) (Cosmic ray showers)

BERINDE, A.

The Missbauer effect. Studii cerc fiz 12 no.2:469-505 '61.

1. Universitatea "C. I. Parhon," Facultatea de matematica si fizica, Catedra de fizica atomica.

(Gamma rays)

HULUBEI, H., acad.; MARTALOGU, N.; BESLIU, C.; IVASCU, M.; BERINDE, A.

Inelastic diffusion of the neutrons of 5,2 Mev. over As.
Comunicarile AR 12 no.2:141-147 F '62.

1. Institutul de fizica atomica, Bucuresti.

38050

S/056/62/042/006/001/047
B104/B102

24 6610

AUTHORS: Hulubei, H., Neamu, I., Franz, I., Martalogu, N., Soîntei, N., Ivascu, M., Berinde, A.

TITLE: Scattering of low energy proton from S^{32}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1433 - 1437

TEXT: Experiments were carried out with the U-120 (U-120) cyclotron of the Institute of Atomic Physics in Bucharest. Protons of 5.70, 5.85, 6.02, 6.20 and 6.34 Mev with an energy spread of 150 kev were focused into a scattering chamber with a tantalum tube. 4 diaphragmas in this tube reduced the diameter of the incident particle beam to 4 mm. The vacuum sputtered S^{32} target had a surface area of 4 cm^2 and a thickness of less than 2 mg/cm^2. The sensitivity of the angular distributions of inelastically scattered protons to the incident proton energy (Fig. 2) indicates the formation of a compound nucleus. The asymmetry of the distribution curve may be explained by direct interaction. The angular distribution curves of

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2

Scattering of low energy proton from S^{32}

S/056/62/042/006/001/047
B104/B102

elastically scattered protons show that the reaction mechanism via compound nucleus formation in elastic processes with $E_p \simeq 6.02 - 6.34$ Mev plays an increasingly important role. There are 4 figures.

ASSOCIATION: Institut atomnoy fiziki Akademii nauk Rumynskoy Narodnoy Respubliki Bukharest (Institute of Atomic Physics of the Academy of Sciences of the Rumanian People's Republic, Bucharest)

SUBMITTED: November 12, 1961

Card 2/3

HULUBEI, H., acad.; NEAMU, I.; FRANCZ, I.; MARTALOCU, N.; SCINTEI, N.; IVASCU, M.; BERINDE, A.;

Diffusing protons with 4,90 and 5,30 Me V energy on aluminum. Studii cerc fiz 14 no.6:741-745 '63.

1. Institutul de fizica atomica, Bucuresti.

ACCESSION NR: AP4009101 S/0056/63/045/006/1822/1826

AUTHORS: Khulubey, Kh.; Frants, Zh.; Martalogu, N.; Sky*ntey, N.; Ivashku, M.; Berinde, A.; Nyamu, I.

TITLE: Scattering of protons with energies below 5 MeV by Ne-20

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 1822-1826

TOPIC TAGS: proton inelastic scattering, excitation function, proton elastic scattering, neon 20, scattered proton angular distribution, compound nucleus, compound nucleus model, excitation mechanism, scattering mechanism

ABSTRACT: To check on the possible formation of a compound nucleus and to investigate the conditions under which the curves of the angular distribution for inelastic scattering change their form, the excitation functions were measured for elastic and inelastic scat-

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tering of 3.35--5.15 MeV protons by Ne^{20} at an angle of 90°. The angular distributions for 3.65, 400, 4.15, and 4.35 MeV incident protons were also measured. The authors reported similar work at lower energy (Nucl. Phys. v. 39, 686, 1962). Variations in the energy dependence of the excitation function and the angular distributions have confirmed the formation of the compound nucleus during the course of the reaction. Data by H. Heitler, A. N. May, and C. F. Powell (Proc. Roy. Soc. v. 190, 180, 1947) indicating a sharp increase in the elastic scattering differential cross section at angles below 50° are not confirmed. Elastic scattering plays a larger role in the formation of the compound nucleus and this accounts for the observed increase in cross section at large angles. The change in the form of the curves of the inelastically scattered protons can also be attributed to some effects of a compound nucleus in which a limited number of levels is excited. Orig. art. has: 6 figures and 2 formulas.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920007-7"

ACCESSION NR: AP4009101

ASSOCIATION: Institute of Atomic Physics, Bucharest, Rumania

SUBMITTED: 24Jun63 DATE ACQ: 02Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 009

Card 3/3

BERINDE, A.

Nucleon distribution at low energies in the light of present models of the nucleus structure. Pt. 1. Studii cerc fiz 15 no. 1: 61-124 '64.

1. Department of the Structure of Matter, Bucharest University.

BERINDE, A.

Nucleon distribution at low energies in the light of present models of the nucleus structure. Pt. 2. Studii cerc fiz 15 no. 2:181-245 '64.

1. Bucharest University.

CORCIOVEI, A.; BERINDE, A.

Thermal vibrations in thin films. Studii cerc fiz 15 no. 3: 374 '64.

1. Institute of Atomic Physics, Bucharest.

L 9810-66 EWT(m)/T/EWA(m)-2

ACC NR: AP5027995 SOURCE CODE: UR/0386/65/002/007/0327/0329

AUTHOR: Khulubey, Kh.; Skyntey, N.; Berinde, A.; Martalogu, N.; Nyamu, I. 31 B

ORG: Institute of Atomic Physics, Bucharest, Rumania

TITLE: Small-angle scattering of protons by Mg^{24}

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. (Prilozheniye), v. 2, no. 7, 1965, 327-329

TOPIC TAGS: Proton scattering, magnesium, scattering cross section, angular distribution

ABSTRACT: The purpose of the investigation was to explain earlier results on inelastic scattering of protons with excitation of the first-excited level of Mg^{24} (Q = 1.37 Mev) (O. F. Nemets and G. A. Prokopets, ZhETF v. 38, 693, 1960) at an incident-proton energy 6.8 Mev. The results indicate that whereas at medium and large scattering angles the scattering proceeds for the most part via compound nucleus production, at small angles an appreciable role should be played by some other mechanism. To explain this fact, the authors studied inelastic small-angle proton scattering with semiconductor detectors, the use of which eliminates some errors of the earlier procedure. The protons were obtained in the cyclotron of the Physics Institute in Bucharest by accelerating atomic-hydrogen ions. The detector used was a silicon semiconductor, covered with a tantalum plate. The monitor was a scintillation counter oriented 90° relative to the proton beam direction. The target was a thin rolled magnesium foil 1 mm/cm^2 thick. The measurements were made in steps of

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L 9810-66
ACC NR: AP5027995

two degrees for the angles between 10 and 20° and in larger steps for larger angles. The angular distributions (Fig. 1) obtained show that the ratio of the proton elastic scattering cross section to the Rutherford scattering cross section decreases with decreasing scattering angle. A similar decrease in this ratio for small angles was obtained also by Hon Jeong et al. (Nucl. Instr. Meth. v. 28, 325, 1964) at E_p = 9.8 Mev for the case of A^{40}. The inelastic distribution of the protons does not agree with the data of Nemets and Prokopets at angles below 30°. This may be partially due to a difference in the incident-proton energies, but also to a relatively strong change in the elastic cross section with changing energy in the small-angle region, which may be due to the contribution from the compound-nucleus formation mechanism. Orig. art. has: 2 figures and 1 formula.

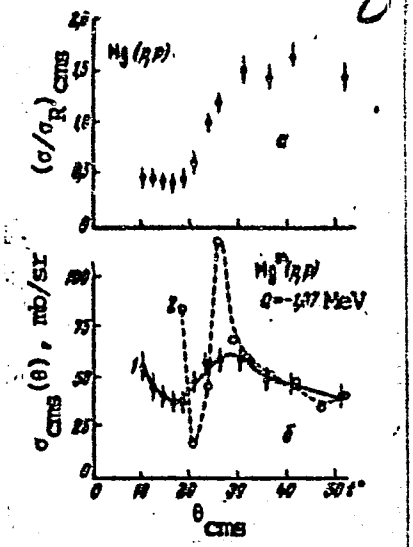

Fig. 1. Angular distribution of protons elastically (a) and inelastically scattered (b) by Mg^{24}.
1 - present data, 2 - results of Nemets and Prokopets.

SUB CODE: 20/ SUBM DATE: 31Jul65/ ORIG REF: 001/ OTH REF: 002

Card 2/2

PAUNESCU-PODEANU, A.; BERINDE, L.; MANESCU, N.; MANIU, I.; DANCAU, G.; BALTACEANU, O.

Rheumo-tuberculous states. Probl. reumat.,Bucur. 4:55-71 1956.

(TUBERCULOSIS, complications
rheumatic disord., pathogen. & incidence)
(RHEUMATISM, etiol. & pathogen.
tuberc., incidence & mechanism)

RUMANIA / General Problems of Pathology. Immunity. U

Abs Jour: Ref Zhur-Biol., No 11, 1958, 51494.

Author : Panuescu-Podeam, A., ~~Berindo, L.,~~ Georgescu, I., Sgavirdia, C., Roth, L., Sandor, S., Lupea, V., Reichrak, S.
Inst : Not given.
Title : "Antibody Disease"? A Case of a Complex Disorder of the Process of Antibody Production.

Orig Pub: Med. interna, 1957, 9, No 6, 915-920.

Abstract: No abstract.

Card 1/1

PAUNESCU-PODEANU, A., prof.; BERINDE, L., dr.; METZ, A., dr.; GAVRILESCU, M., dr.

Postsplenectomy thrombocythemia. (Contribution to the etiopathogenesis and contraindications of splenectomy). Med. intern. 13 no.10:1401-1408 O '61.

(SPLEEN surgery) (BLOOD PLATELETS)

BERINDEAN, V.

Contributions to the study of the spontaneous combustion of Etalon D II gasoline. Studii tehn Timisoara 10 no.2:367-375 Jl-D '63.

BERINDE, Violeta, ing. (Bucuresti)

Influence of electrodes used to determine the permittivity and the tangent of the loss angle of plastic materials. Electrotehnica 12 no.11:426-428 N '64.

1. Chief Researcher, Research and Electrical Engineering Planning Institute.

BOLOGAN, V., ing.; BERINDE, V., ing.

Shaving gear wheels after cementing. Constr mas 15 no. 9: 622-628 S '63.

1. Uzina "Infratirea", Oradea.

L 46281-66 EWP(e) WH
ACC NR: AP6031213 SOURCE CODE: RU/0004/65/000/002/0053/0059

AUTHOR: Marcus, Bruno (Bucharest); Diaconu, Lucia (Chief scientific researcher; Bucharest); Berinde, Violeta (Chief scientific researcher; Bucharest) 43 B

ORG: [Marcus; Diaconu] Laboratory of Ceramic Material, ICPE, Bucharest (Laboratorul de materiale ceramice ICPE); [Berinde] Laboratory of Electrophysics, ICPE, Bucharest (Laboratorul electrofizie ICPE)

TITLE: Electroinsulating materials[16] based on mica[16] bonded with glass[16]

SOURCE: Electrotehnica, no. 2, 1965, 53-59

TOPIC TAGS: electric insulation, mica product, glass product

ABSTRACT: The physical, mechanical and electrical characteristics of electroinsulating materials based on mica bonded with glass, as obtained in various countries, are presented, and the production and field of utilization of such materials are discussed with special emphasis on the work being done at the Institute for Electrotechnical Research and Planning with a view to introducing them in Rumania. Orig. art. has: 13 figures and 6 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 09, 11 / SUBM DATE: 30Oct64 / ORIG REF: 001 / SOV REF: 003
OTH REF: 005

LS
Card 1/1

0918 2646

BERINDEAN, V.

Stepping up the filling of the cylinder in the engines supercharged by the compression of the residual gases at the intake. Studii tehn Timisoara 9 no.1/2:97-102 Ja-Je '62.

BERINDEAN, V.; CARAMAVRU, N.; TRUSCULESCU, M.; FERENCZ, A.

Study of the combustion process of the tractor self-ignition engine with mixed feeding, gas oil and liquefied petroleum gas. Bul St si Tehn Tim 8 no.1:85-93 Ja-Je '63.

BERINDEAN, V.

Contributions to the study of the self-ignition of homogenous mixtures of air and diesel oil. Bul St si Tehn Tim 9 no.1:65-73 Ja-Je '64.

1. Submitted April 26, 1964.

BERINDEAN, V.; TRUSCULESCU, M.

Contributions to the study of torsion oscillations for a line of shafts of a 1 100 dwt vessel. Bul St si Tehn Tim 9 no.2:367-376 Jl-D '64.

[redacted]

[redacted] Violeta (Chief researcher [redacted]

[redacted] the electrodes used [redacted]
[redacted] angle of plastic

[redacted] no. 11, 1964, [redacted]

[redacted] permittivity, [redacted]

[redacted] This [redacted] reviews the present [redacted]
[redacted] not describes tests performed [redacted]
[redacted] variation of the loss angle [redacted]

[redacted]

[redacted]

[redacted]

MARCUS, Bruno (Bucuresti); DIACONU, Lucia, cercetator stiintific principal (Bucuresti); BERINDE, Violeta, cercetator stiintific principal (Bucuresti)

Electroinsulating materials based on mica bonded with glass. Electrotehnica 13 no.2:53-59 F '65.

1. Head of the Laboratory of Ceramic Materials of the Research and Electrotechnic Planning Institute (for Marcus). 2. Laboratory of Ceramic Materials of the Research and Electrotechnic Planning Institute (for Diaconu). 3. Electrophysical Laboratory, of the Research and Electrotechnic Planning Institute (for Berinde). Submitted October 30, 1964.

BERINDEI, D.

Organisation of the "Architectural Corps" in 1864. p. 600

INDUSTRIA CONSTRUCTILOR SI A MATERIALELOR DE CONSTRUCTII, BUCURESTI, Vol 6, No. 11, Nov., 1955

SO: East European Accessions List (EEAL) Library of Congress, Vol 5, No. 7, July, 1956

BERINDEI, Ignatie

Some observations on some periglacial forms in the western part of the Huedin Depression. Probleme geog 7:241-248 '60. (EEAI 10:3)
(Glacial epoch) (Rumania--Geology)

PANUNESCU-POIENANU, A.; BERINDEI, I.; MICLEA, F.; DANCAU, G.; FALCOIANU, A.; SGAVIRDIA, C.; LAZAR, G.

Reactive episodic hypertension during the initial period of myocardial infarct. Med. int., Bucur. 10 no.4:541-546 Apr 58.

(MYOCARDIAL INFARCT, manifestations
episodic hypertension, in early infarct)
(HYPERTENSION, etiol. & pathogen.
myocardial infarct, early stages)

RUMANIA / Cultivated Plants. Commercial. Oil-Bearing. M-5
Sugar-Bearing.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25169

Author : Valuta, Gh., Berindei, M.
Inst : Not given
Title : The Vernalization of Sugar Beet Seeds

Orig Pub: Probl. agric., 1957, 9, No 2, 35-45 (Rum., res. Russ., Fr.)

Abstract: Investigations made at the experimental base in Moara Domnyaska (Rumania) show that the best results in yielding capacity are gotten by vernalizing seeds for 10 days at 10°. Pre-planting dusting of the vernalized seeds with ash also helped to boost the yield considerably. It is stated that the vernalization of seeds of late-ripening varieties, alongside of speeding up the ripening time, increases the beet harvest. -- A.M. Smirnov

Card 1/1

RUMANIA/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. H.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44255

Author : Valuta, Gh., Constantescu, V., Berindei, M.

Inst : AS RPR

Title : The Pre-Sowing Treatment of Sugar Beet Seeds.

Orig Pub : Bul stiinte. Acad. RPR. Sec. Biol. si stiinte. agric. Ser. agron., 1957, 9, No 2, 105-112.

Abstract : The effect of the following treatments on the best yield was studied under field conditions: soaking seeds with water taken in the quantity of 50% of the weight of the seeds; vernalization for 10 days at 10°; soaking in the nutrient solution (NPK); soaking with water and vernalization with a subsequent mixing of the seeds with ashes.

Card 1/2

RUMANIA/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. H.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44255

The best results were obtained by vernalization of the seeds with the subsequent sowing of them with the aid (crop increase of 19%). --- A.N. Sudnov

Card 2/2

BE[illegible], M.

RUMANIA/Cultivated Plants - Potatoes, Vegetables, Melons. M-3

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10801

Author : Berindei, M.
Inst : -
Title : Dates of Sowing Potatoes, Their Spacing and Depth of Planting.

Orig Pub : Probl. agric., 1957, 9, No 4, 95-104

Abstract : No abstract.

Card 1/1

RUMANIA/Cultivated Plants. Potatoes. Vegetables. Melons. M

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68166

Author : Berindei, Tusha
Inst : Moara Domneasca Experiment Station (Bucharest Oblast'); Marculesti Experiment Station (Constanta Oblast').
Title : Mulching Potatoes Planted in Summer.

Orig Pub : Probl. agric., 1957, 9, No 6, 94-104

Abstract : In 1953-1955, an investigation was made of the influence of mulching potatoes (Sepunar variety); they were planted in the summer at the Moara Domneasca Experiment Station, Bucharest Oblast' (heavy soils), and at the Marculesti Experiment Station, Constanta Oblast' (light soils). The mulching was done

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RUMANIA/Cultivated Plants. Potatoes. Vegetables. Melons. M

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68166

with wheat straw during planting, and, in another variant, after the first weeding. No mulch was applied to the controls. The plants on the mulched areas had a greater quantity of stalks and leaves and a higher average tuber weight. In all cases, mulching increased the tuber weight by 10-35 percent on the average. On the heavy soils the best results were attained when mulching was done during planting, while on the light soils, both mulching dates produced the same increase in yield. -- P. I. Lopushanskiy

Card : 2/2

S/273/63/000/001/008/013
A052/A126

AUTHOR: Berindean, V.

TITLE: A study of combustion laws of gasoline-air mixtures at compression ignition

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 39. Dvigateli vnutrennego sgoraniya, no. 1, 1963, 32, abstract 1.39.205 (Studii si cercetări ştiinţe tehn. Acad. RPR, Baza Timişoara, v. 8, no. 1 - 2, 1961, 99 - 105; Rumanian; summaries in Russian and French)

TEXT: The combustion process of homogeneous gasoline-air mixtures is investigated. The experiments were carried out on an USSR-made one-cylinder IIHAM (TsIAM) motor unit. Pressures in the cylinder were measured with a piezoelectric pickup and recorded on an oscillograph. The relative amount of fuel consumed at the moment of maximum pressure in the cylinder was determined by N.S. Akulov's equation and by experimentally determined ignition delay $P = f(\tau)$ and the time interval between maximum combustion pressure and maximum pressure at the end of the compression cycle. The unit operated under the following conditions:

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A study of combustion laws of gasoline-air S/273/63/000/001/008/013
A052/A126

ϵ = 7.57, t_{mix} = 104°C, t_{wat} = 97°C, n = 900 ± 2 rpm. Based on p = f (τ) diagram, a table of fuel consumption was prepared depending on the relation between the process duration τ_2 and the delay τ_1. The results of the experiments are: 1) The relative amount of fuel consumed increases with the increase of the relation τ_2/τ_1; however, this increase continues until τ_2/τ_1 = 2.1 and then slows down. 2) The relative amount of fuel consumed increases when the delay τ_1 decreases.

N. Kirichenko

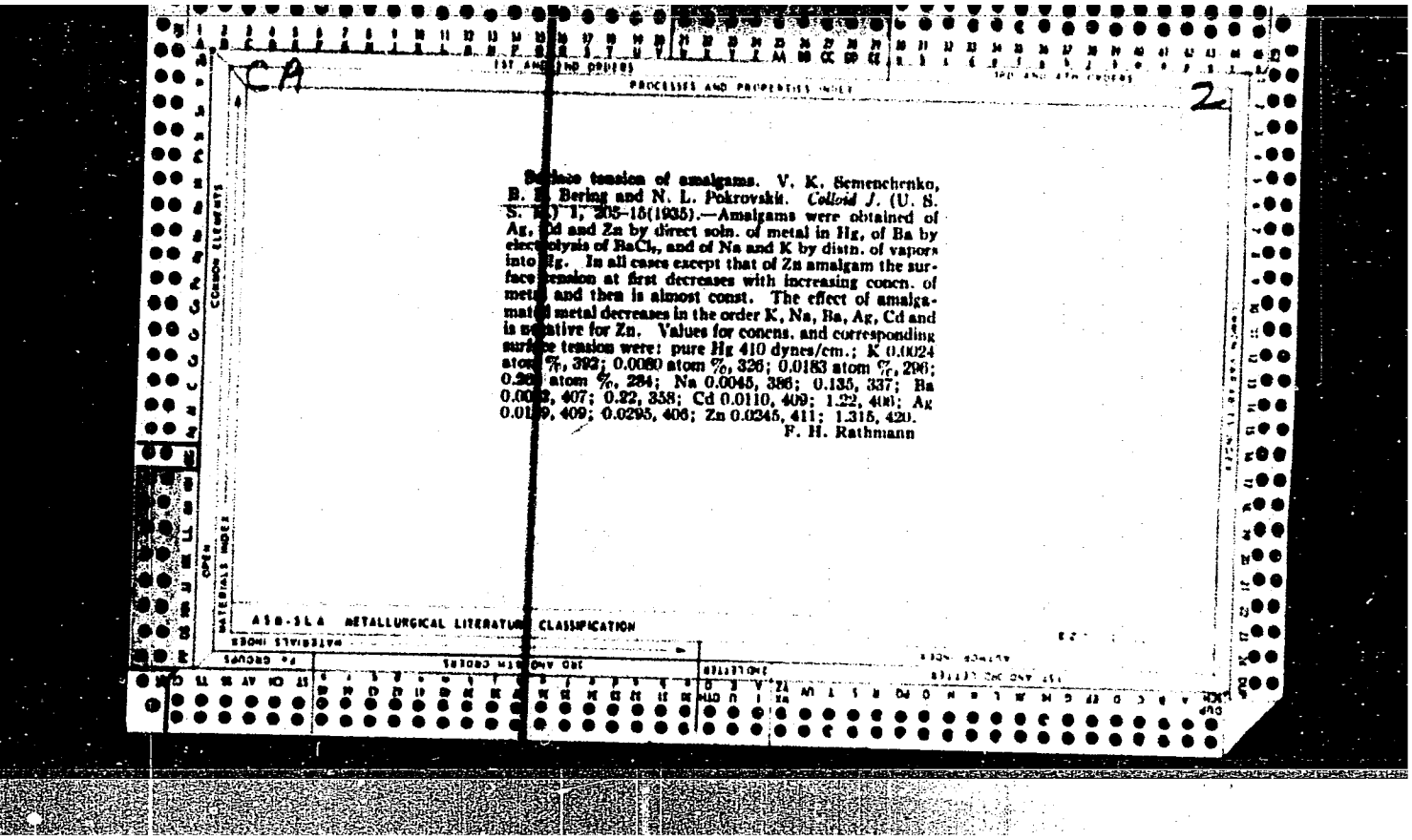
[Abstracter's note: Complete translation]

Card 2/2

CHERNYAVSKIY, M.I., sanitarnyy vrach; SHEYNIN, B.Ya., sanitarnyy vrach; BERINSKAYA, TS.I., epidemiolog

Control of influenza in industrial enterprise. Gig.i san. 25 no.1:72-74 Ja '60. (MIRA 13:5)

1. Iz Mediko-sanitarnoy chasti Khar'kovskogo zavoda transportnogo mashinostroyeniya imeni V.A. Malysheva.
(INFLUENZA prev. & control)



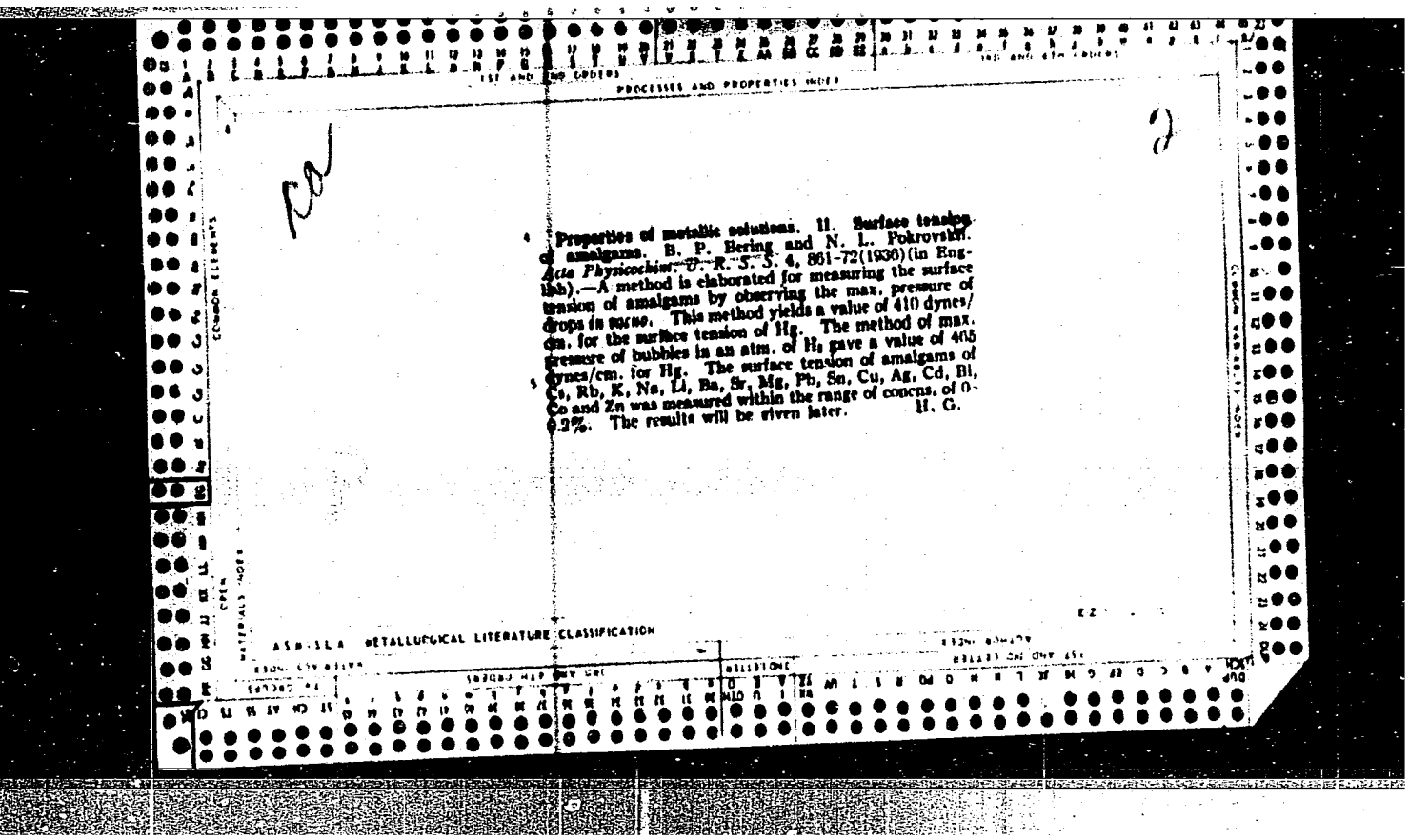
CA

2

Surface tension of amalgams. V. K. Semenchenko, B. [illegible] Bering and N. L. Pokrovskii. *Colloid J.* (U. S. S. R.) 1, 205–18(1935).—Amalgams were obtained of Ag, Cd and Zn by direct soln. of metal in Hg, of Ba by electrolysis of $BaCl_2$, and of Na and K by distn. of vapors into Hg. In all cases except that of Zn amalgam the surface tension at first decreases with increasing concn. of metal and then is almost const. The effect of amalgamated metal decreases in the order K, Na, Ba, Ag, Cd and is negative for Zn. Values for concns. and corresponding surface tension were: pure Hg 410 dynes/cm.; K 0.0024 atom %, 392; 0.0080 atom %, 326; 0.0183 atom %, 296; 0.20 atom %, 284; Na 0.0045, 386; 0.135, 337; Ba 0.0[illegible]2, 407; 0.22, 358; Cd 0.0110, 409; 1.22, 406; Ag 0.01[illegible]9, 409; 0.0295, 406; Zn 0.0345, 411; 1.315, 420.

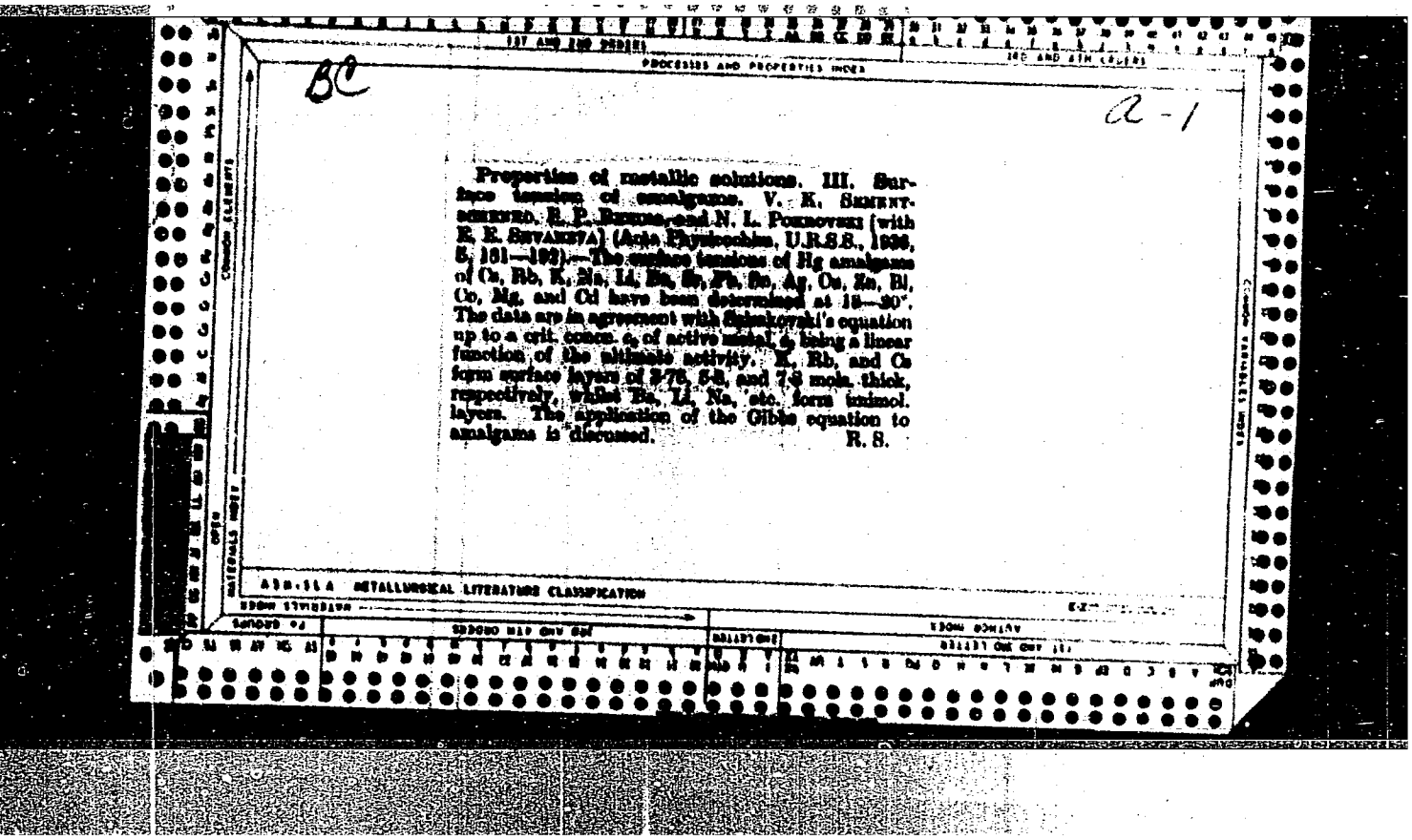
F. H. Rathmann

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION



Properties of metallic solutions. II. Surface tension of amalgams. B. P. Bering and N. L. Pokrovskii. *Acta Physicochim. U. R. S. S.* 4, 861-72(1936)(in English).—A method is elaborated for measuring the surface tension of amalgams by observing the max. pressure of drops in vacuo. This method yields a value of 410 dynes/cm. for the surface tension of Hg. The method of max. pressure of bubbles in an atm. of H_2 gave a value of 405 dynes/cm. for Hg. The surface tension of amalgams of Cs, Rb, K, Na, Li, Ba, Sr, Mg, Pb, Sn, Cu, Ag, Cd, Bi, Co and Zn was measured within the range of concns. of 0-0.2%. The results will be given later. H. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

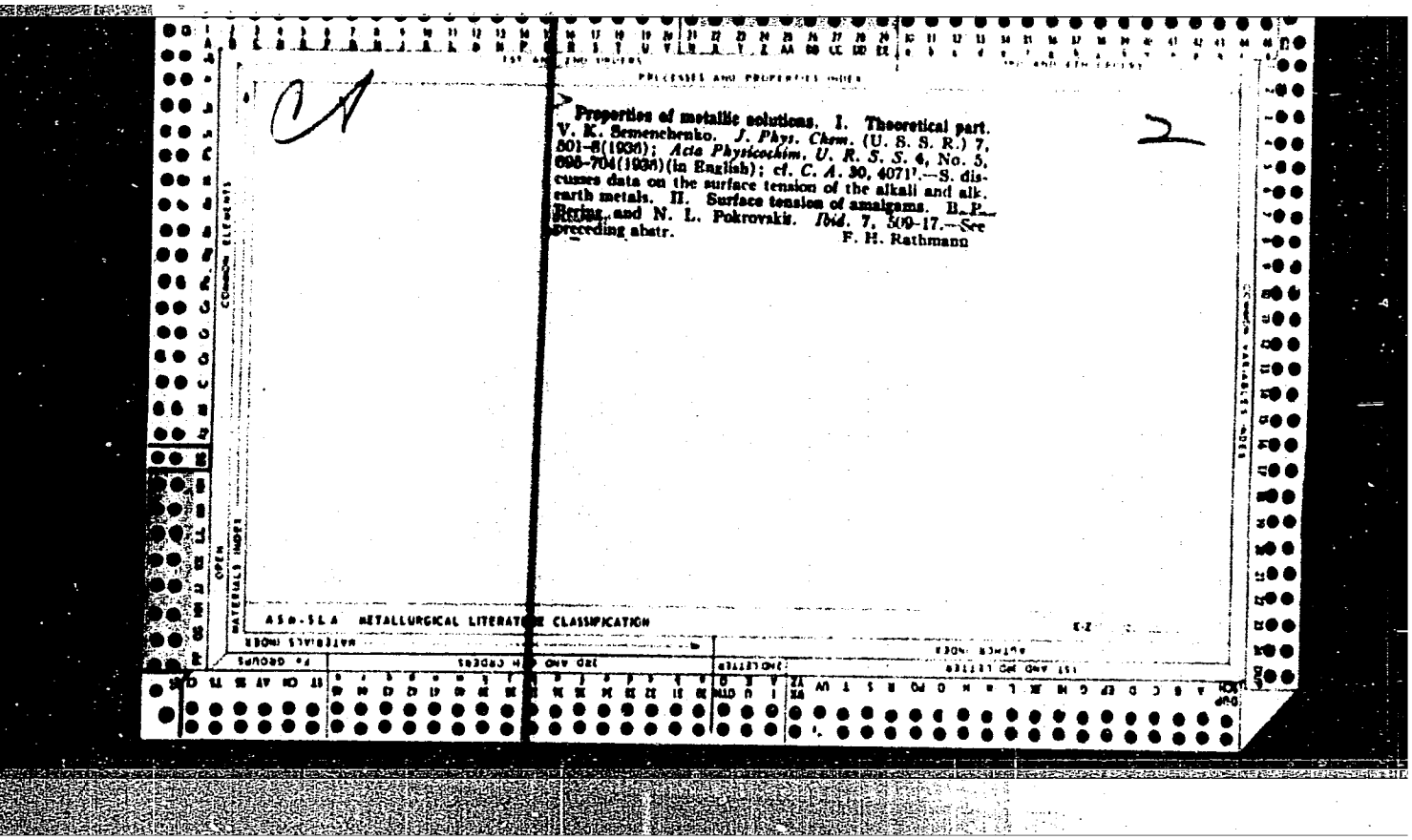


BC

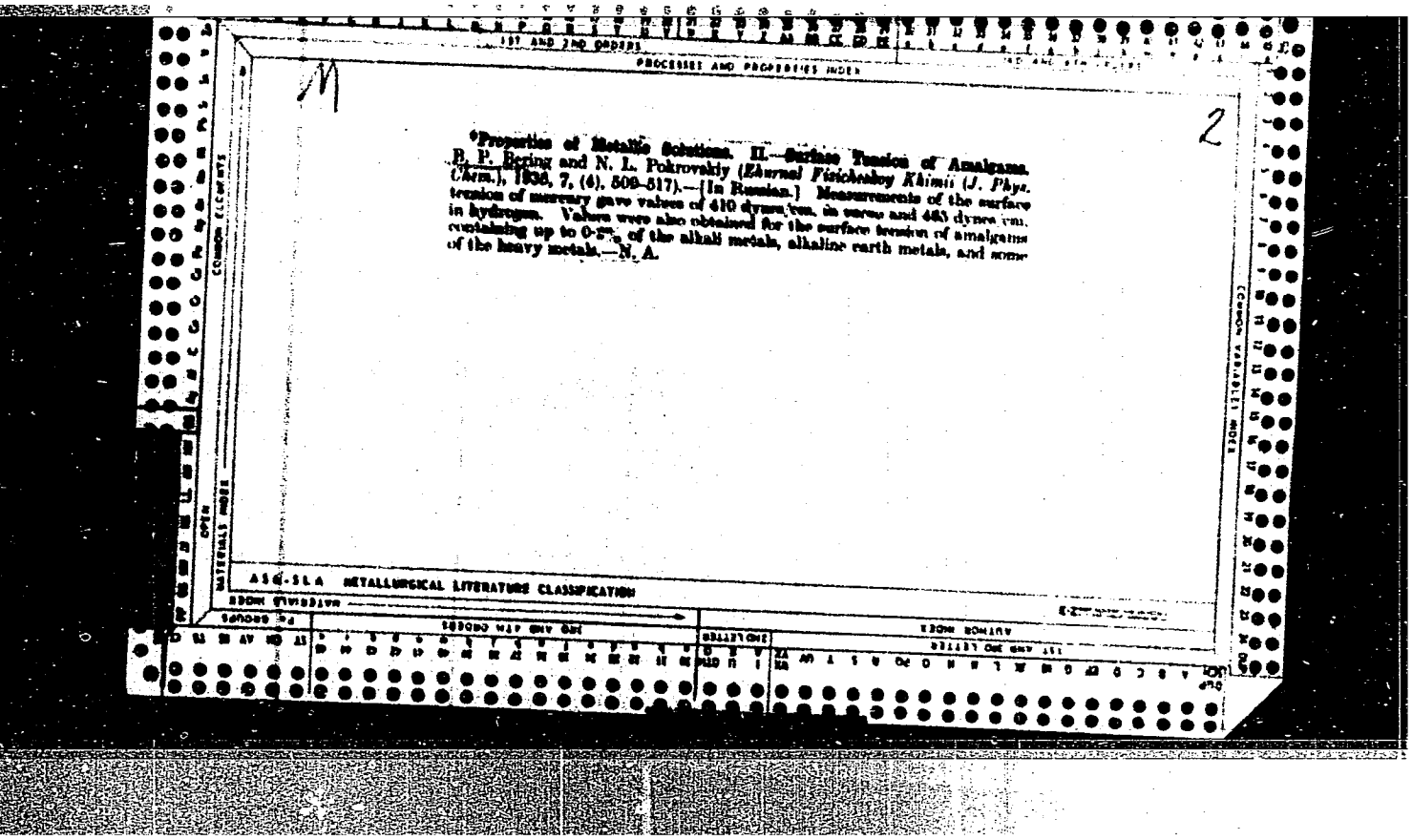
a-1

Properties of metallic solutions. III. Surface tensions of amalgams. V. K. Sementschenko, B. P. Bruns, and N. L. Pobnovski [with R. E. Shvarzman] (Acta Physicochim. U.R.S.S., 1936, 5, 181—192).—The surface tensions of Hg amalgams of Cs, Rb, K, Na, Li, Ba, Sr, Pb, Sn, Ag, Cu, Zn, Bi, Co, Mg, and Cd have been determined at 18—20°. The data are in agreement with Szyszkowski's equation up to a crit. concn. c_0 of active metal, c_0 being a linear function of the ultimate activity. K, Rb, and Cs form surface layers of 9·76, 8·8, and 7·8 mols. thick, respectively, whilst Ba, Li, Na, etc. form unimol. layers. The application of the Gibbs equation to amalgams is discussed. R. S.

A38-11A METALLURGICAL LITERATURE CLASSIFICATION



Properties of metallic solutions. I. Theoretical part. V. K. Semenchenko. *J. Phys. Chem.* (U. S. S. R.) 7, 501–8(1936); *Acta Physicochim. U. R. S. S.* 4, No. 5, 699–704(1936)(in English); *cf. C. A.* 30, 4071⁹.—S. discusses data on the surface tension of the alkali and alk. earth metals. II. Surface tension of amalgams. B. P. Rtrina and N. L. Pokrovskii. *Ibid.* 7, 509–17.—See preceding abstr.
F. H. Rathmann



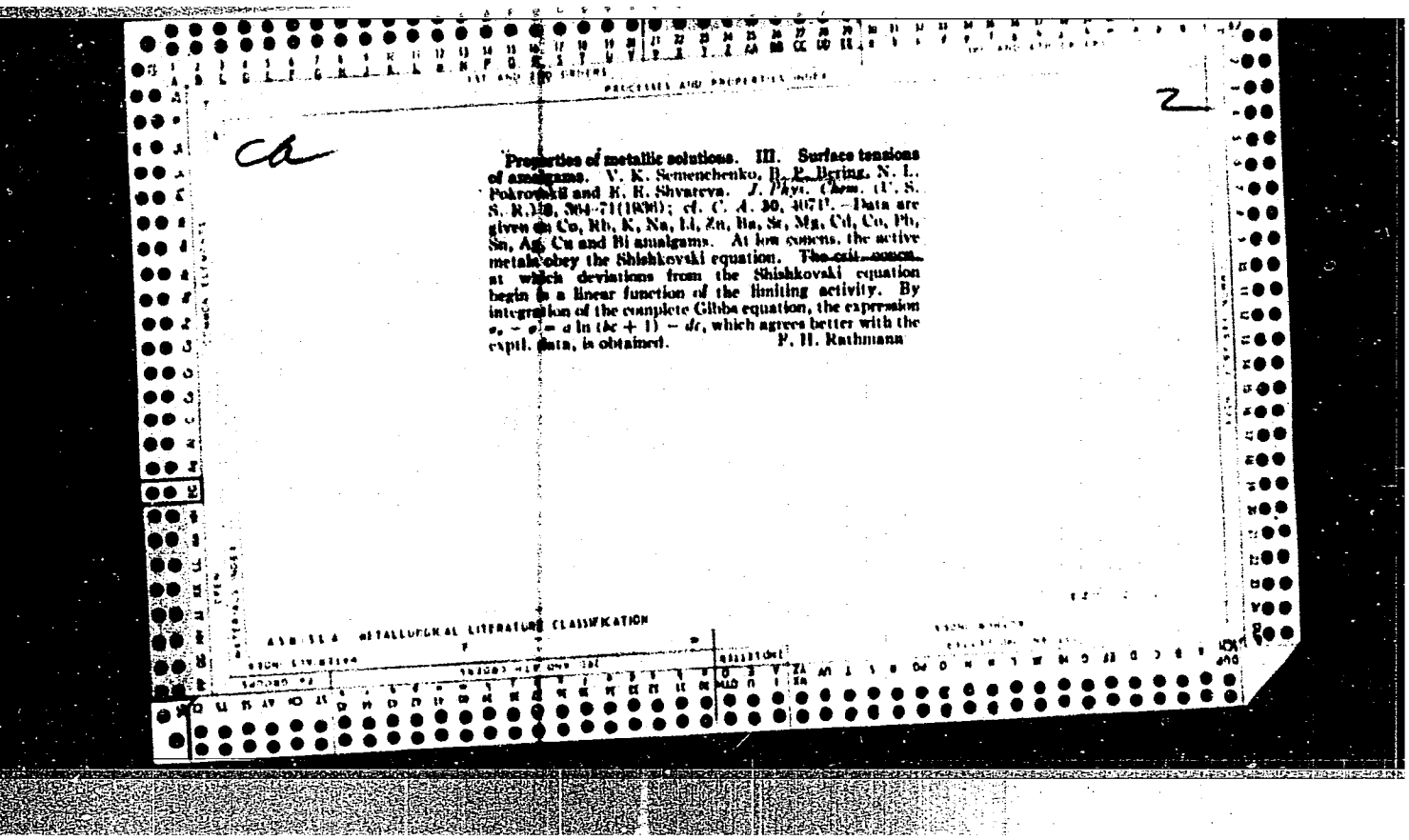
PROCESSES AND PROPERTIES INDEX

M

2

*Properties of Metallic Solutions. II.—Surface Tension of Amalgams. B. P. Bering and N. L. Pokrovskiy (*Zhurnal Fizicheskoy Khimii* (*J. Phys. Chem.*), 1936, 7, (4), 509–517).—[In Russian.] Measurements of the surface tension of mercury gave values of 410 dynes/cm. in vacuo and 465 dynes/cm. in hydrogen. Values were also obtained for the surface tension of amalgams containing up to 0·5% of the alkali metals, alkaline earth metals, and some of the heavy metals.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

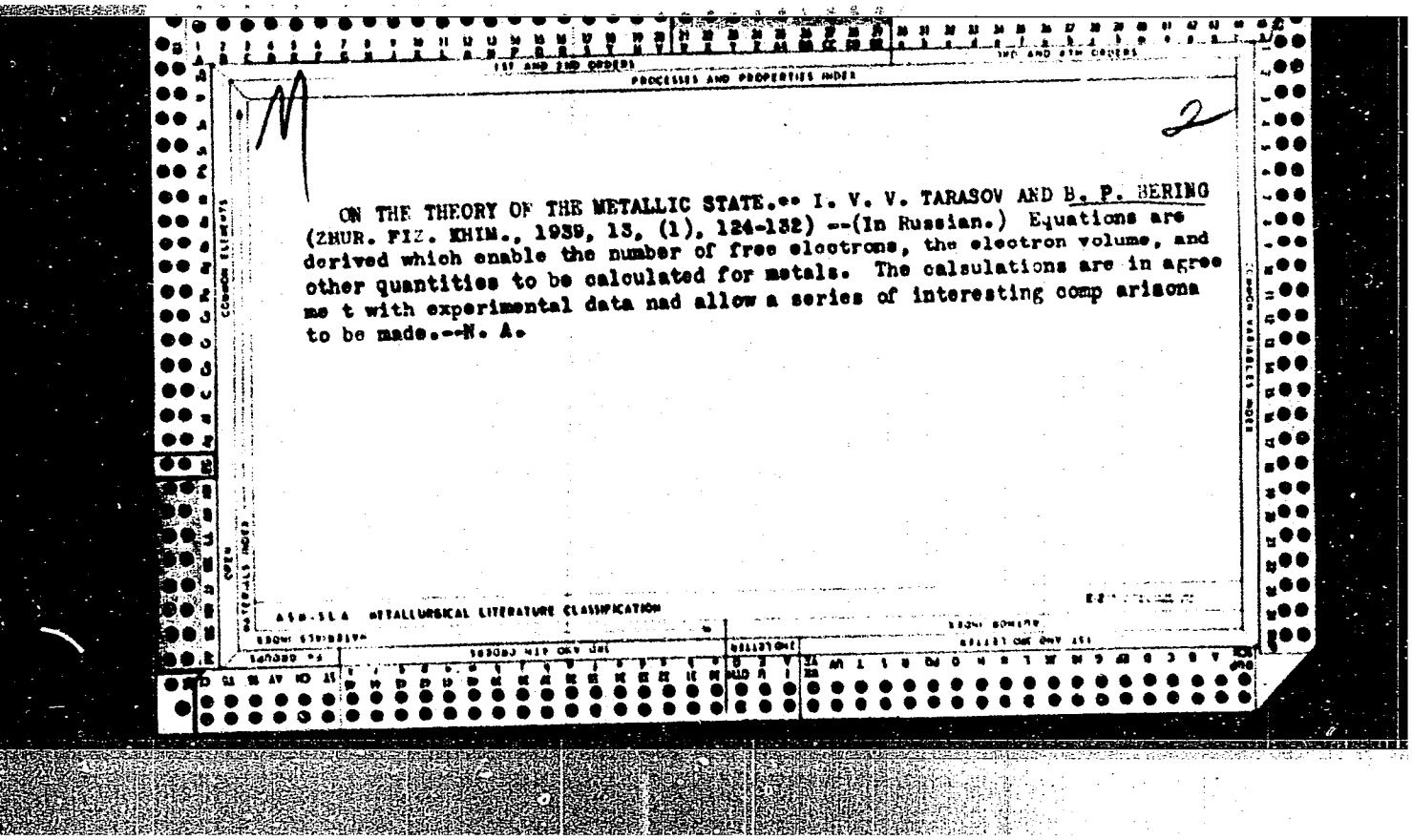


Ca

2

Properties of metallic solutions. III. Surface tensions of amalgams. V. K. Semenchenko, B. P. Bering, N. L. Pokrovskii and K. R. Shvareva. *J. Phys. Chem. (U. S. S. R.)* 13, 304–71(1939); cf. *C. A.* 30, 4071⁹. – Data are given on Cu, Rb, K, Na, Li, Zn, Ba, Sr, Mg, Cd, Co, Pb, Sn, Ag, Cu and Bi amalgams. At low concns. the active metals obey the Shishkovski equation. The crit. concn. at which deviations from the Shishkovski equation begin is a linear function of the limiting activity. By integration of the complete Gibbs equation, the expression $\sigma_0 - \sigma = a \ln(bc + 1) - dc$, which agrees better with the expil. data, is obtained. P. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

M

2

ON THE THEORY OF THE METALLIC STATE.•• I. V. V. TARASOV AND B. P. BERING (ZHUR. FIZ. KHIM., 1939, 13, (1), 124-132) --(In Russian.) Equations are derived which enable the number of free electrons, the electron volume, and other quantities to be calculated for metals. The calsulations are in agree me t with experimental data nad allow a series of interesting comp arisons to be made.--N. A.

A50-51A METALLURGICAL LITERATURE CLASSIFICATION

BERING, B. P. Cand. Chem. Sci.

Dissertation: "Absorption of Vapors on the Surface of Mercury." Moscow Order of Lenin State U imeni M. V. Lomonosov, 24 Sep 47.

SO: Vechernyaya Moskva, Sep, 1947 (Project #17836)

BERING, B. P. PA 8T67

USSR/Adsorption Mar 1947
Gases, Adsorbed

"A New Method of Measuring Adsorption of Gases and Vapors by Solids," B. P. Bering, V. V. Serpinsky, 4 pp

"CR Acad Sci" Vol LV, No 8

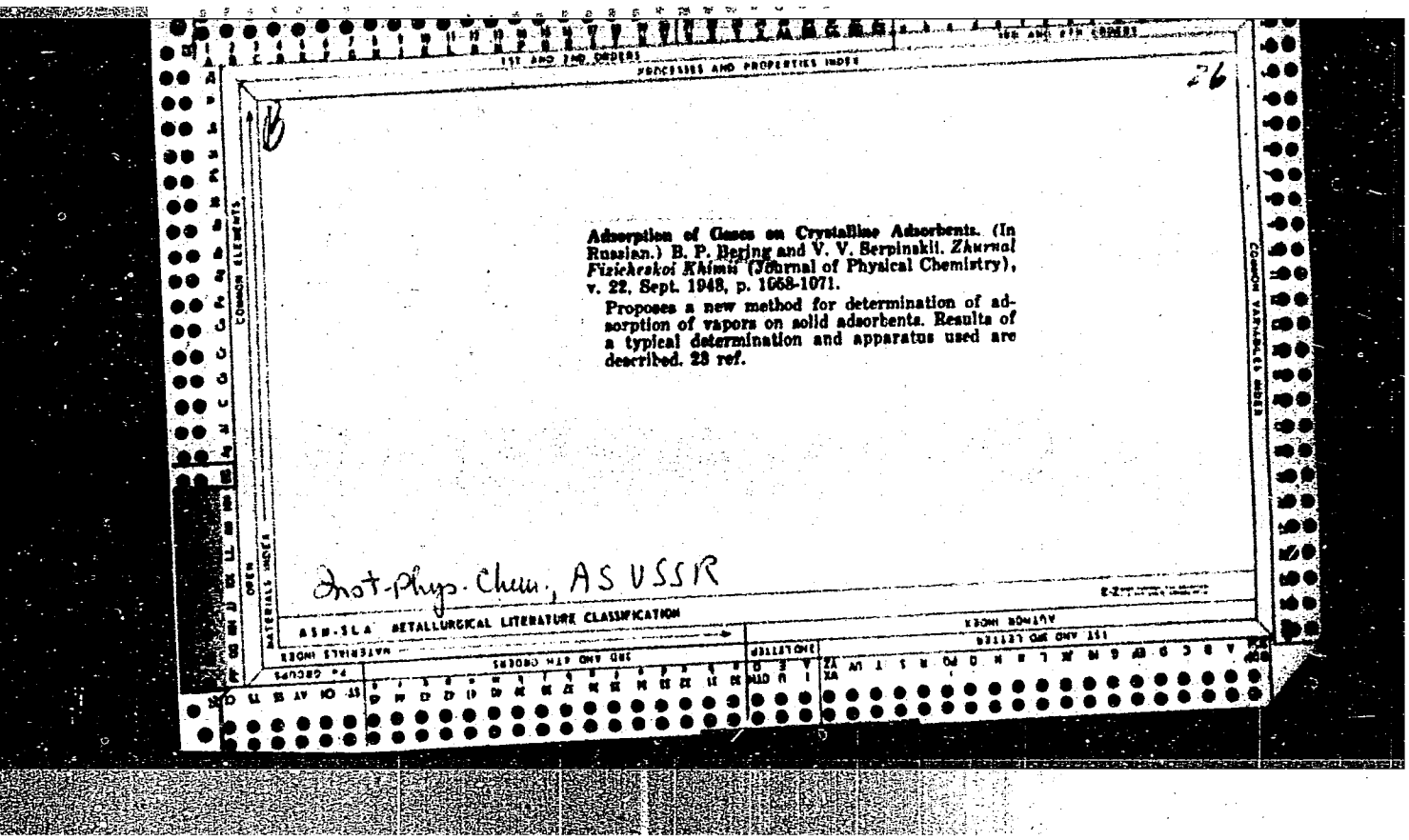
High-sensitivity beam torsion-type microbalance to improve the so-called gravimetric method.

8T67

CA

2

Adsorption of methanol vapor on barium sulfate. B. P. Berkin and V. V. Serpinskii (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* **58**, 1081–4 (1947); cf. *C.A.* **43**, 4614.—Expt. results of adsorption of MeOH vapor on $BaSO_4$ are given graphically, the data being collected at 21°. The adsorption isotherm has S-shape, with apparent unimol. adsorption up to h 0.3, followed by multilayer adsorption, with 2nd layer completed at h 0.98 and 3rd at h 0.99. The isotherm equation is $\log(a/h) = A'a^3 + B = (A/s^3)a^3 + B$, which in this instance gives $A' = 9.88 \times 10^{-4}$ g.^{3}/μM^3 and $B = -6.10$. The Harkins-Jura equation (*C.A.* **38**, 1922^3) applies only to a narrow range of a values, whereas the above formulation agrees with expt. data from $a = 0$ to $a = 62$. G. M. Kosolapoff



Adsorption of Gases on Crystalline Adsorbents. (In Russian.) B. P. Bering and V. V. Serpinskii. *Zhurnal Fizicheskoi Khimii* (Journal of Physical Chemistry), v. 22, Sept. 1948, p. 1063-1071.

Proposes a new method for determination of adsorption of vapors on solid adsorbents. Results of a typical determination and apparatus used are described. 23 ref.

Inst-Phys. Chem., ASUSSR

BERING, B.P.

A new method for the investigation of the adsorption of gases and vapors. B. P. Bering and V. V. Serpinskii. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1959, 184–6(1959).—An app. is described that operates according to the principle of independent weighing, i.e., the elongation of 2 quartz spirals (microscales) is measured, one of which is in a cooled container. The sensitivity of this app. is in the order of 10^{-4} g., if the wt. of adsorbent charged is 0.1 g. and if the adsorbed material has a mol. wt. of 30–100, i.e., the sensitivity of this method is in the order of 10^{-4} millimoles/g. The pressure changes in the manometers are measured electrically with an accuracy of 0.1–0.2 %.

Werner Jacobson

BERING, B. P.

USSR/Chemistry - Adsorption 11 Jul 51

"Monomolecular Adsorption on Uniform Surfaces," B. P. Bering, V. V. Serpinskiy, Inst of Phys Chem, Acad Sci USSR; Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol LXXIX, No 2, pp 273-276

Studies the effect of the mutual interaction of adsorbed mols. Derives 2 eqs, one for a localized layer and one for a nonlocalized layer of mols adsorbed on a uniform surface. Plots the adsorption isotherms corresponding to them.

214T9

BERING, B.F.; SERPINSKIY, V.V

Adsorption

A new method for investigating the adsorption of gases and vapors. Trudy Inst. fiz. khimii AN SSSR no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED

BERING, B.P.

British Abst.
A I
Aug. 1953
Physical Properties and Molecular Structure of Solutions, Etc.

Adsorption of gas mixtures. II. Simultaneous adsorption of ethylene and propylene on active carbon. B. P. Bering and V. V. Serpinskii (*Izvestia*, 1952, 997—1007).—The adsorption of C_2H_4 and propylene on active C is determined, using the same method and the same active C as in Part I (*J. phys. Chem., USSR*, 1952, **26**, 253). The adsorption of pure gases and their mixtures is measured at 7° and 25° in the total pressure range 0—350 mm. From the study of the three-dimensional adsorption models (where two ordinates represent partial pressures of gases and the third one the adsorption, expressed in millimoles per g. of C) it is seen that the adsorption of propylene is only slightly decreased in presence of even large amounts of C_2H_4, the slope of the adsorption isotherm remaining unchanged. In contrast, the adsorption of C_2H_4 is appreciably reduced by admixture of even small amounts of propylene and the adsorption isotherm becomes already linear when partial pressure of propylene reaches 50 mm. Expressions for the integral heat of adsorption of the binary gas mixture and for the differential heats of adsorption of each component are derived and the differential heats are calculated and plotted as a function of adsorption. The presence of propylene lowers considerably the differential heat of adsorption of C_2H_4, whereas that of propylene is virtually unaffected by the presence and partial pressure of C_2H_4. It follows, that the mol. of propylene are adsorbed on the portions of surface of high adsorption energy and mol. of C_2H_4 on the portions of low adsorption energy.

S. K. Lachowicz

5-21-54 mef

BERING, B. P.

CATALYST

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Adsorption of mixtures of gas. II. Adsorption of ethylene and propylene on active carbon. B. P. Bering and V. V. Serpinskii. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 877-84(Engl. translation).—See C.A. 47, 3756f.
H. L. H.

(2)

9-2-54
BPP

BERING, B. P.

7
(6)

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Adsorption properties of montmorillonite clays. B. P. Bering, V. P. Dréving, A. V. Kiselev, V. V. Serpinskii, M. D. Sinitsa, and K. D. Shcherbakova. *Colloid J. (U.S.S.R.)* 14, 433–41(1952)(Engl. translation).—See C.A. 47, 8080c. H. L. H.

USSR/Chemistry - Adsorption Feb 52

"Adsorption of Gas Mixtures. I. Adsorption of Ethylene and Carbon Dioxide on Activated Carbon," S. P. Bering, V. V. Serpinskiy, Inst of Phys Chem, Acad Sci USSR; Moscow State U imeni M. V. Lomonosov

"Zhur Fiz Khim" Vol XXVI, No 2, pp 253-269

Describes procedure for precise measurement of adsorption of binary gas mixts which is based on volumetric dosage of components of gas mixt and analysis of equil gas phase by detg heat cond. Measured adsorption of carbon dioxide-ethylene mixts on activated carbon at 25.4° within wide range of concns at pressures of equil gas phase between 0-300 mm Hg. Discusses thermodynamic relationships which govern the adsorption of each component; establishes thermodynamic criterion which must be satisfied by any valid theory of adsorption of gas mixts; criticizes E. C. Markham and A. F. Benton's theory (J Am Chem S, Vol LIII, 497, 1931). Proves empirically that there is no dependence of coeff of selectivity on compn of equil gas phase provided that total pressure is const; that this coeff, calcd for the more highly adsorbable component, drops with total pressure. Shows inapplicability of theory advanced by S. Z. Roginskiy and O. M. Todes to system under study.

211T50

211T50

BERING, B.

BERING, B. P.

PA 239T21

USSR/Chemistry - Adsorption Aug 52

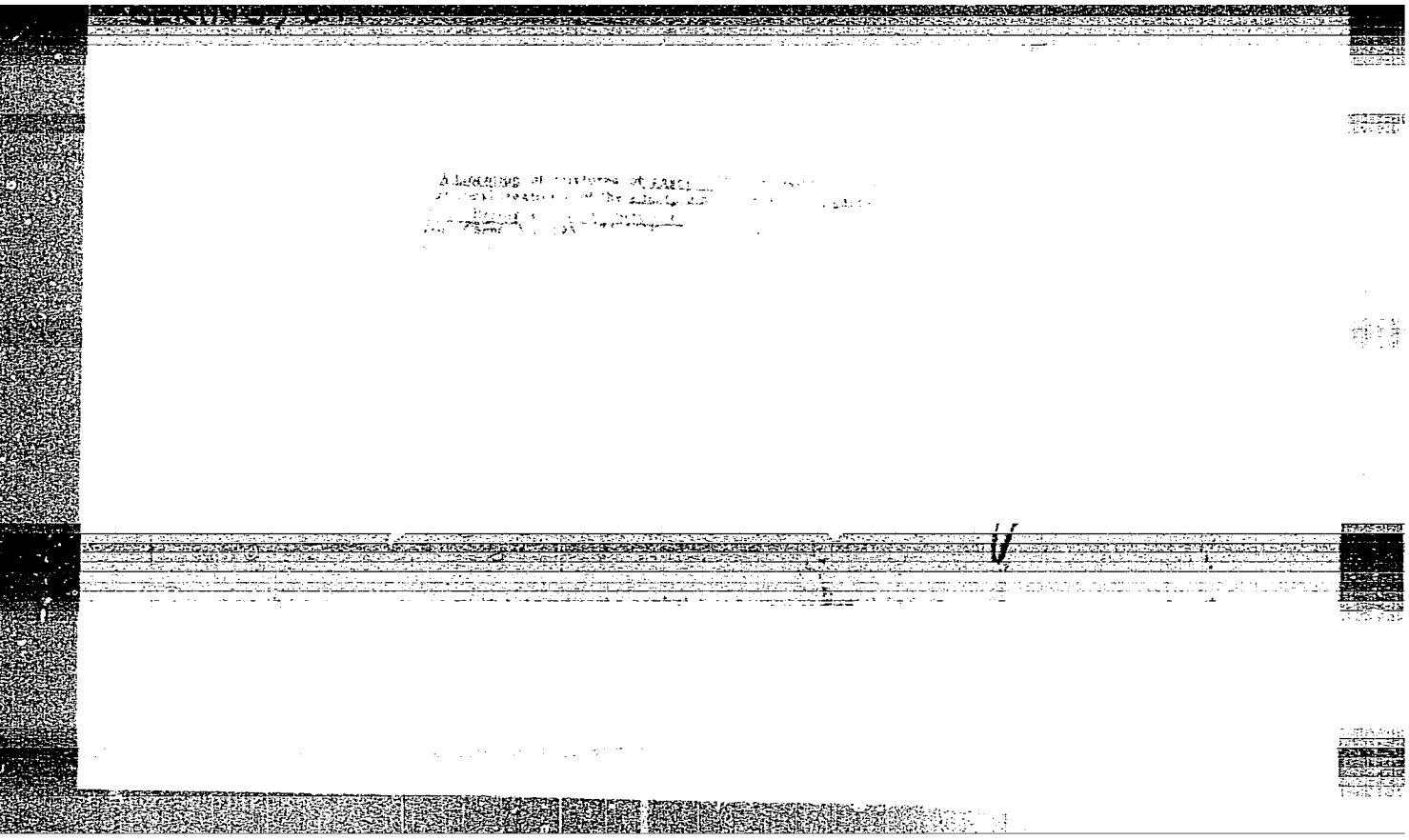
"The Simultaneous Adsorption of Ethylene and Propylene on Activated Carbon," B. P. Bering and V. V. Serpinskiy, Inst of Phys Chem, Acad Sci USSR; Moscow State U

"DAN SSSR" Vol 85, No 5, pp 1065-1068

The presence of propylene in the adsorption phase greatly lowers the differential heat of adsorption of ethylene, while the differential heat of adsorption of propylene remains practically unchanged. Propylene, adsorbing on the most active parts of a nonuniform surface, blocks the adsorption of ethylene mols. Submitted by Acad M. M. Dubinin 27 May 52.

239T21

239T21



BERING, B.P.

USSR

Adsorption of mixtures of [illegible] water vapor and of ethyl chloride

Zhur. Fiz. Khim., Vol. 27, No. 7, 1953, pp. [illegible]

BERING, B. P.

Adsorption of mixtures of gases. IV. Adsorption of water vapors and of ethyl chloride on active charcoal. B. P. Bering and V. V. Serpinskii (Inst. Phys. Chem. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 957–67; cf. *C.A.* 47, 5757*e*; *C.A.* 48, 4927*f*.—A vol.-wt. method is described for measuring the simultaneous adsorption of a binary mixt. of gases or vapors on solid adsorbents. Measurements were made on the simultaneous adsorption of mixts. of H_2O and EtCl on active charcoal at 74° over an interval of relative pressures of water vapor from 0 to 0.85 and of partial pressures of EtCl from P_2 = 0 to 180 mm. Hg. The adsorption isotherms for water at P_1 = const. move with rising values of P_2 toward the right from the origin of coördinates, while the slope of the middle linear portion increases. At const. partial pressures of EtCl and with increasing relative pressures h of water vapor above 0.5, a sharp decrease in the adsorption of EtCl is observed. On further increase of h the EtCl almost completely drives the water from the charcoal. The space-geometry of the increase in adsorption d. during the adsorption of binary mixts. is discussed. It is shown that within the limits of the Langmuir theory, as the pressure increases, the coeff. of satn. γ approaches unity. It was found that for the adsorption of mixts. of H_2O + C_2H_5Cl on charcoal at high pressures, γ approaches 5, and hence in the adsorption five mols. of H_2O are equiv. to one mol. of C_2H_5Cl. It is shown that the difficulties that arise in the interpretation of the results obtained from the point of view of the concept of a capillary condensation of water for the system studied, and considering one of the other possible mechanisms for the adsorption of water on charcoal, based on the assumption of a 2-dimensional phase passing over into an adsorption layer, depends on the formation of H bonds between the adsorbed water mols. Exptl. results are shown by means of 10 figures. F. H. R.

BERING, B.P.

"The Adsorption of Gas Mixtures. Report 3, Concerning the Possibility of Treating Statistically the Effects of the Adsorption of Gas Mixtures," Inst. of Phys Chem, Acad Sci USSR, and Moscow State U.

Izv Ak Nauk SSSR OKhn, no. 1, 37-47, Jan/Feb 1953

The Authors examined the general equations ensuing from the theory of the adsorption of binary gas mixtures on heterogeneous surfaces in the absence of a reaction. They demonstrated in what instances it was possible to compute the adsorption from a mixture (by well-known isotherms of

258T4

adsorption) of pure components, without an intermediate calculation of the function of diffusion. Derive the principle of linear projection of isosteres of additive adsorption. Compare their conclusions with the results of exptl. research into the adsorption of binary gas mixtures on activated carbon and point out the satisfactory agreement between theory and expt.

BERING, B. P.

Gallium

Gallium [from "J. Chem. Education" v. 29, 162, '52] G. H. Vagner, V. H. Gitzen. Translated by B. P. Bering. Usp. khim. 22, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

BERING B. P.

1

Volumetric-gravimetric method for measuring the adsorption of gas mixtures. B. P. Bering and V. V. Serpinskii. *Doklady Akad. Nauk S.S.S.R.* 90, 811-14(1953); cf. *C.A.* 47, 4084g, 5756f; 50, 2239c.—A new method is described for measuring the adsorption of gas mixts. The method is a combination of volumetric and gravimetric methods and consists in placing the adsorbent (active C) in a vessel that is suspended from a quartz spring inside a gas chamber of known vol. The components of the gas mixt. are measured by means of gas burettes, and the change in wt. of the adsorbent is detd. after equil. is established. Adsorption isotherms are given for the H_2O-EtCl mixts. on active C at 74°. For the relative pressure ($(p)_{max.}$) for H_2O equal to 0.7-0.8, the EtCl is almost completely displaced from the adsorbing surface. J. Rovtar Leach

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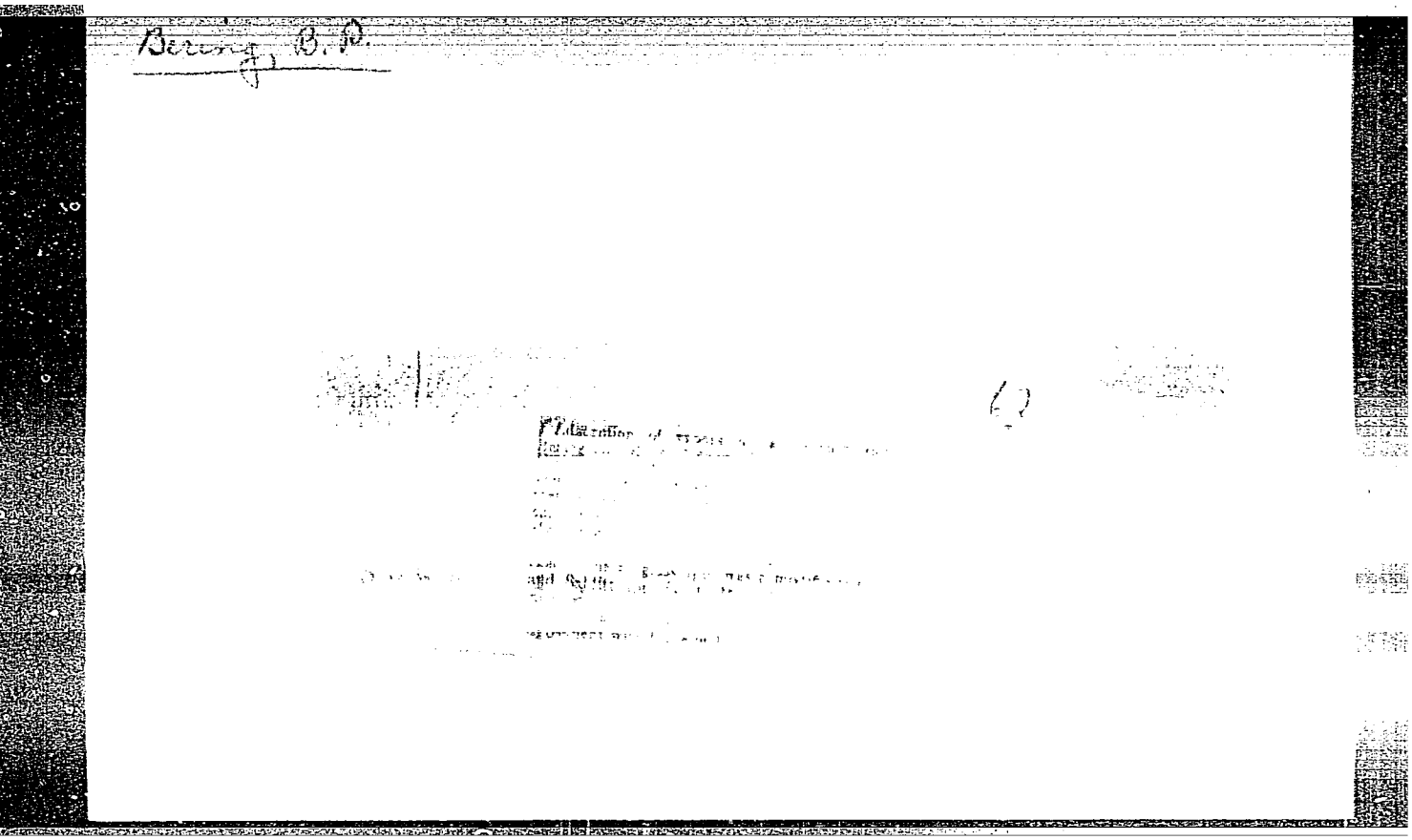
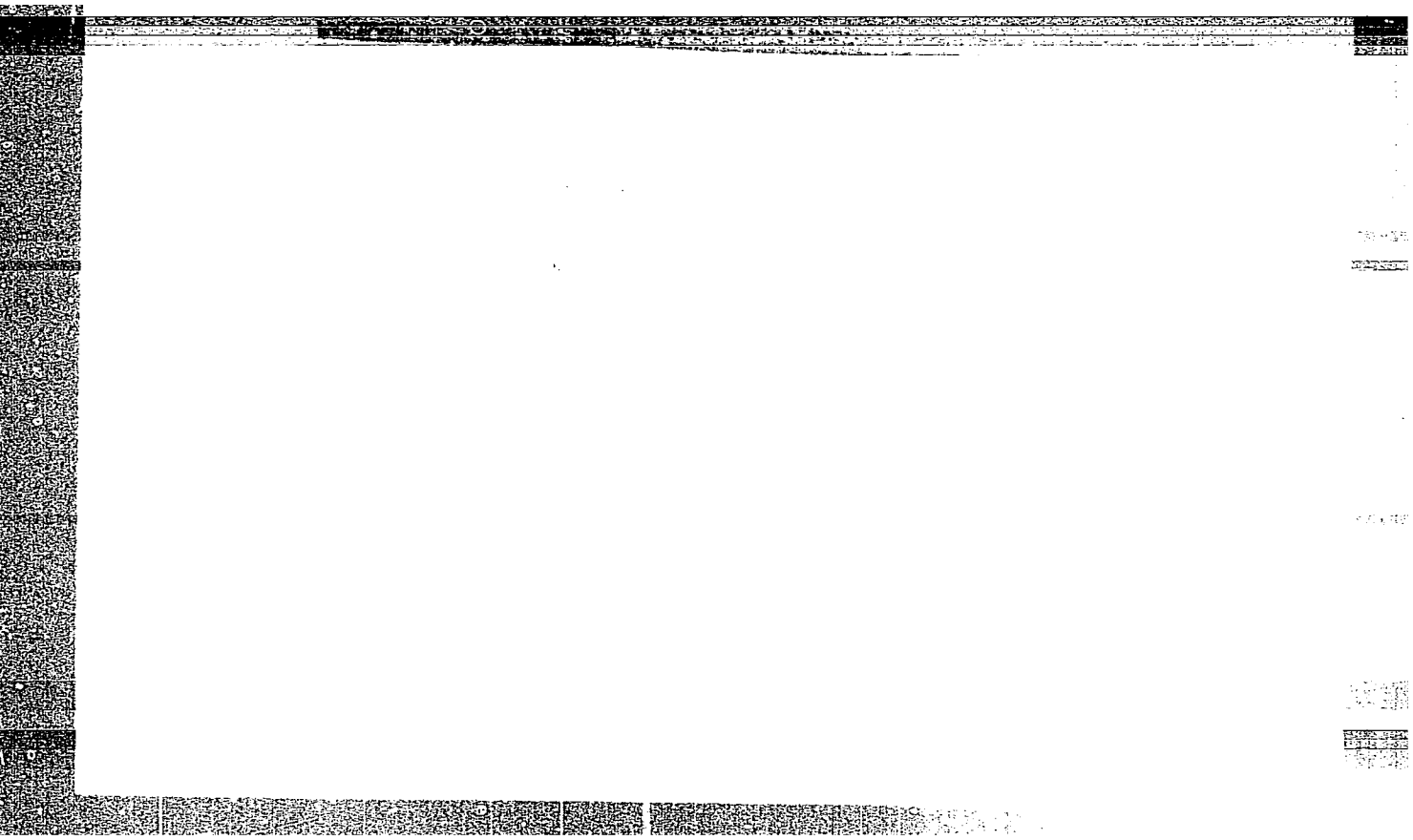




APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920007-7"

AF701597 TREASURE ISLAND BOOK REVIEW AID 841 - S

BERING, B. P. and V. V. SERPINSKIY (Institute of Physical Chemistry, Academy of Sciences, USSR).
IZMERENIYE ADSORBTSII PAROV AZOTA NA KRISTALLAKH KHLORISTOGO NATRIYA PRI POMOSHCHI KVARTSEVYKH VESOV VYSOKOY CHUVSTVITEL'NOSTI (Measurement of the adsorption of nitrogen vapors on sodium chloride crystals with a highly-sensitive quartz balance). In Problemy kinetiki i kataliza (Problems of Kinetics and Catalysis), vol. 8. Izdatel'stvo Akademii Nauk SSSR, 1955. Section V: New experimental methods. p. 243-247.

An illustration and description of a quartz microbalance developed in the Laboratory for Sorption Processes of the Institute for Physical Chemistry of the Academy of Sciences, U.S.S.R. is given in Fig. 1 (p. 244). Adsorption of nitrogen was determined at 77 and 90°K on a highly dispersed NaCl preparation with a surface equal to 3000 cm^2. The adsorption isotherms for N_2 on NaCl at 77 and 90°K are shown in Fig.2 (p. 246). Four diagrams, 8 references, 3 Russian (1948-1955).

1/1

USSR/Chemistry - Physical chemistry

Card 1/2 Pub. 40 - 2/27

Authors : Bering, B. P., and Ioyleva, K. A.

Title : Adsorption of vapors on the surface of mercury

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 9-16, Jan-Feb 1955

Abstract : Using the method of maximum pressure in drops, the authors measured the surface tension of Hg in vacuum and in water and methyl alcohol vapors to determine the vapor adsorption on the surface of Hg. The vapor adsorption isotherms were computed on the basis of above mentioned measurements. Adsorption isotherms are also given for ethyl and n-butyl alcohols.

Institution : Acad. of Sc., USSR, Inst. of Phys. Chem.

Submitted : May 26, 1954

Card 2/2 Pub. 40 - 2/27

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 9-16, Jan-Feb 1955

Abstract : Two-dimensional phase conversions of the first order, corresponding to two-dimensional condensation, were observed during mercury adsorption of water and alcohol. The heat of two-dimensional condensation in the case of H_2O was found to be close to normal heat of [illegible] and in the case of methyl alcohol it exceeds it by 1 kcal. [illegible] 5 USA; 4 English; 2 German and 6 USSR (1918-[illegible]). [illegible]

USSR/ Chemistry - Inorganic chemistry

Card 1/1 Pub. 40 - 4/26

Authors : Bering, B. P., and Ioyleva, K. A.

Title : Adsorption of vapors on the surface of mercury. Part 2.

Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 216 - 223, Mar-Apr 1955

Abstract : The feasibility of a certain chemical equation for the case of a nonlocalized adsorption is explained with consideration of the electrostatic [illegible] of the uniformly arranged dipole molecules of diethyl ether, acetone, pentane and toluene on a mercury surface. The applicability of this equation is also verified by computing the heats of adsorption of [illegible] assumed that the adsorption of acetone, toluene, [illegible] on Hg causes an induction of dipole moments in the adsorbed [illegible] atoms which, by their magnitude, are [illegible] polar molecules. Data regarding the polarization [illegible] on mercury surfaces are included. [illegible] and 6 USSR (1916-1955). Tables; graphs.

Institution : Acad. of Sc., USSR, Inst. of Phys. Chem.

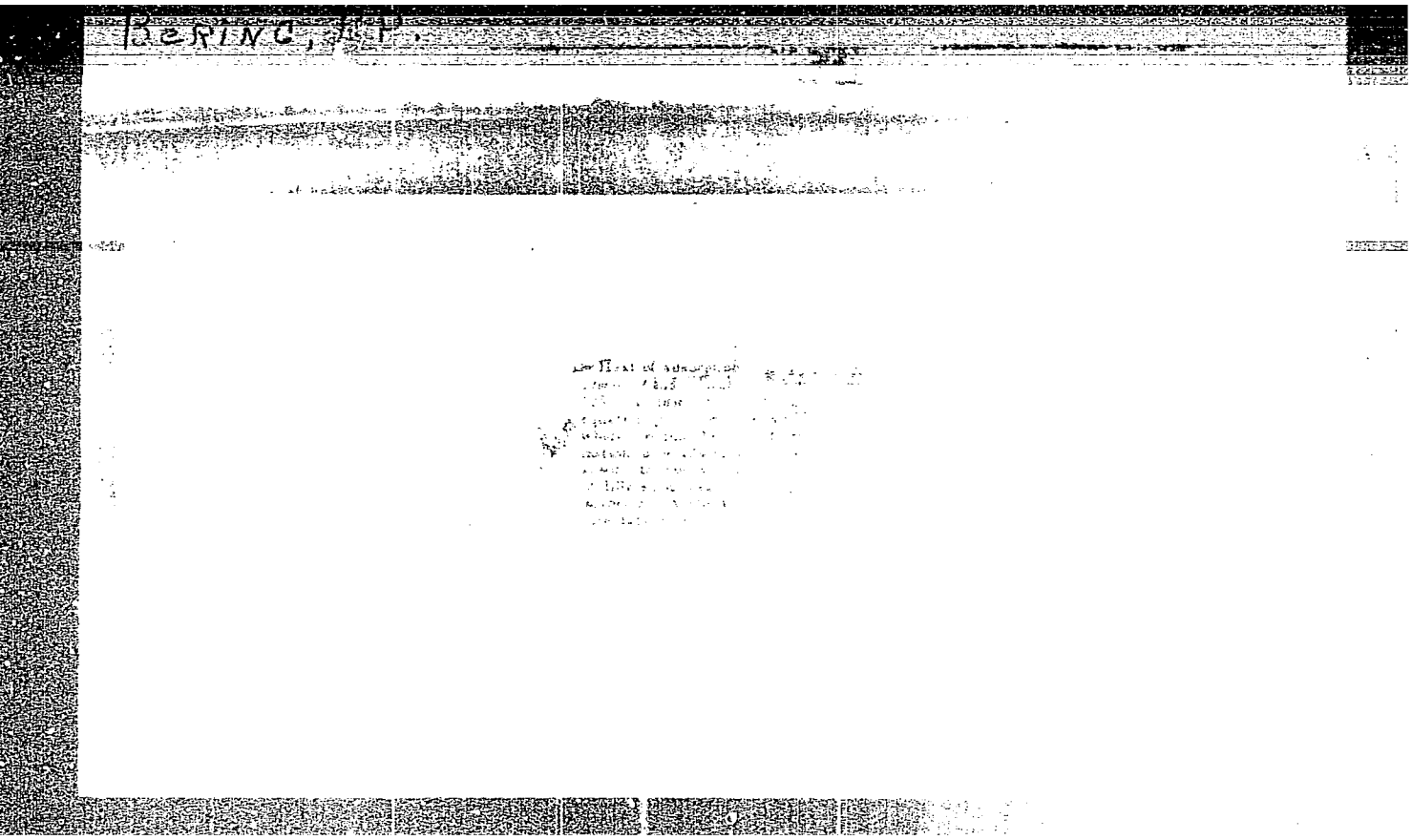
Submitted : May 26, 1954

BERING, B.P.; SERPINSKIY, V.V.

Measuring nitrogen-vapor adsorption on sodium chloride crystals by means of highly sensitive quartz scales. Probl.kin.i kat. 8:243-247 '55. (MLRA 9:5)

1. Institut fizicheskoy khimii AN SSSR.
(Adsorption) (Nitrogen) (Sodium chloride)

BERING, B.P., Doc Chem Sci -- (diss) "Adsorption of mixtures of gases and vapors". Mos, 1957, 25 pp (Acad Sci USSR, Inst of Phys. Chemistry), 100 copies. (KL, 1-58, 114)



USSR/Physical Chemistry - Surface Phenomena, Adsorption, Chromatography, Ion Interchange. B-13

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 4014.

installation for N_2 at -195° on silica gel and for benzene vapors at 20° on activated carbon coincided practically with corresponding IS-s taken down by the volumetric (N_2) or gravimetric methods by other authors on other installations. (See part II in RZhKhim, 1957, 26362.)

Card : 2/2 -18-

BERING, B P

20-1-36/64

AUTHOR VASIL'YEV, B.N., BERING, B.P., SERPINSKIY, V.V.
DUBININ M.M., Member of the Academy.

TITLE The Investigation of Absorption At High Pressure.
(Issledovaniye adsorbtsii pri vysokikh davleniyakh - Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 131-134 (U.S.S.R.)

ABSTRACT For the explanation of a number of basic problems of the theory of physical absorption, the research of absorption on the wide interval of temperatures and pressures must occupy first place. The great majority of all cases of measuring physical absorption are carried out only at one and the same temperature or, at the most, within a very narrow scale of temperature. An increase of the interval(of temperatures) on the occasion of measuring absorption invariably leads to a corresponding increase of the pressure interval. None of the investigations hitherto carried out were satisfactory. The study of physical absorption described in this paper (interval -85° to 40°) was carried out including the critical one ($t_{kp}=31^{\circ}$) at 0-85 atm. pressure. For the purpose of this investigation a special device was constructed which has neither a compressor nor a manometer for high pressures. All necessary calculations were carried out on the basis of data obtained empirically in the course of the study of P,C,T-diagrams (CO_2) in the course of precise metrological work.
(5 drawings showing the results of measurements)

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The Investigation of Absorption At High Pressure. 20-1-36/64

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AUTHORS: Bering, B. P. and Serpinskiy, V. V. 20-114-6-32/54

TITLE: Calculation of the Heat and Entropy of Adsorption According to a Single Adsorption Isotherm (Vychisleniye teploty i entropii adsorbtsii po odnoy izoterme adsorbtsii)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr 6, pp. 1254-1256 (USSR)

ABSTRACT: Either direct calorimetric measurements or thermodynamic calculations are used for determining the values of the heat and entropy of sorption in dependence on the quantity of the sorbed substance. The calculations are based on an empirical determination of the sorption-temperature coefficient. Although both methods are fundamentally clear and do not cause any doubt, they are very toilsome and make great demands on the quality of the experiment. The authors show under which conditions these important thermodynamic characteristics can be calculated according to one isotherm, as mentioned in the title. The extensive test material confirms the basic postulate of Polyani: The so-called adsorption potential $\varepsilon = - RT \ln h$ (where h signifies the relative pressure) is, at a constant value of the filled adsorption-volume $\varphi = aV$ (a- adsorption, V - molar volume of the adsorbate),

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independent on temperature, i. e. $(\partial\varepsilon/\partial T) = -R(\partial T \ell n\ h/\partial T)_{aV} = 0$ (1). It may easily be seen that the adsorption isotherm alone clearly determines the shape of the curve $\varphi = f(\varepsilon)$ of the so-called characteristic curve. According to this (1) the characteristic curve on its part clearly determines the adsorption isotherm at another, approximate temperature, i.e. the adsorption coefficient. Thus the satisfaction of condition (1) must lead to the possibility of calculating the heat and entropy of sorption by means of one isotherm. After further calculations the authors come to the final equation $q = Q - \lambda = \alpha RT^2 (\partial \ell n\ h/\partial \ell n\ a)_T - RT \ell n\ h$. (7) where Q is the sought differential heat of adsorption and λ - the heat of condensation of the adsorbate. When equation (7) is compared to the equation by Gibbs-Gel'mgol'ts, the expression for the differential-entropy of the adsorption is immediately obtained: $\Delta S = (\partial\varepsilon/\partial T)_a = -\alpha RT (\partial \ell n\ a/\partial \ell n\ h)_T$ (9). The authors dispose of considerable evidential material that the results calculated according to equation (7) from one adsorption isotherm are coincide well with the direct calorimetrical measurements or with results of reliable

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calculations from the adsorption-isostheres. Examples for this are given (figures 1, 2). Equation (7) is only completely valid when condition (1) is satisfied. Nevertheless it may be expected that equation (7) will in many other cases also yield a good agreement with the test even when condition (1) is not satisfied. Actually $Q = -T\Delta S + \varepsilon + \lambda$ (1o), and from the equation 7a $[q = (a - \xi)RT^2 (\partial \ell n\, h \partial \ell n\, a)_T - RT \ell nh]$ follows that every deviation from condition (1) only influences the term $T\Delta S$. Therefore considerable values of ξ will also only bring about a small error of the Q-value, when the specific gravity of the term $T\Delta S$ in equation (1o) is not high. Theoretically it is, however, completely undue to disregard the term $T\Delta S$. A corresponding analytical form of the dependence of the differential adsorption-heat on a or on h may be obtained by the combination of the analytical expression for the equation of the adsorption isotherm with equation (7). The method of analysis of the adsorption problems resulting from this may become very promising. There are 2 figures and 4 references, 1 of which is Slavic.

Calculation of the Heat and Entropy of Adsorption According to a Single Adsorption Isotherm 20-114-6-32/54

ASSOCIATION: Institute for Physical Chemistry AS USSR (Institut fizicheskoy khimii Akademii nauk SSSR)

PRESENTED: January 10, 1957, by M. M. Dubinin, Academician.

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BERING, B. P.; SERPINSKIY, V. V.: LUK'YANOVICH, V. M.; RADUSHKEVICH, L. V.; TSITSISHVILI, G. V.; YERMOLENKO, N. F.; DUBININ, M. M.;

"The adsorption from vapors and liquids."

report presented at the Fourth All-Union Conference on Colloidal Chemistry, Tbilisi, Georgian SSR, 12-16 May 1958 (Koll zhur, 20,5, p.677-9, '58, Taubman, A.B)

5 (4)

AUTHORS: Bering, B. P., Dubinin, M. M., Serpinskiy, V. V. SOV/62-59-6-5/36

TITLE: Calculation of the Differential Heats of Vapour Adsorption on Active Coal (Vychisleniye differentsial'nykh teplot adsorbtsii parov na aktivnykh uglyakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 6, pp 981-988 (USSR)

ABSTRACT: Besides applying other methods, the differential adsorption heat may thermodynamically be calculated by means of a model of the adsorption interaction and the theory of molecular forces. In a previous paper by the author (Ref 1) it was shown that according to the potential theory of adsorption the differential heat of an adsorption isotherm may be computed by the following equation: $q = Q - \lambda = \alpha RT^2 \left(\frac{\partial \ln h}{\partial \ln a}\right)_T - RT \ln h$ (1). Here Q denotes the total, and q the pure differential adsorption heat, λ the latent vaporization heat, α the thermal coefficient of the spatial extension of the adsorbed substance, a the adsorption, and $h=p/p_s$ the relative pressure. The characteristic curves of the volume distribution for inhomogeneous adsorption surfaces of different

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type, in the present case active coal, on the adsorption range are known from publications. These curves lead to equations for the adsorption isotherms of different structural types.

(Equations 4 and 5) $a = \frac{Wo}{v} e^{-\frac{BT^2}{\beta^2}(\lg h)^2}$ (I) (4)

$a = \frac{Wo'}{v} e^{\frac{AT}{\beta}\lg h}$ (II) (5). Here Wo (Wo') B (A) denote structural characteristics of the adsorbents, β the affinity coefficient, and v the mole volume. Based upon the equations 1 and 4, or 1 and 5, a term for the differential adsorption heat of vapour of different substances on active coal may be set up. For the purpose of facilitating the computation, this equation was established in variable θ (of the filling degree of the micropores). By following this equation the differential adsorption heat at different numerical values θ was computed for a number of substances on a standard adsorbent at different temperatures. Active coal of the type (I) served as standard adsorbent. The

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values obtained for q are given in a table. A figure shows the dependence of Q on θ for normal heptane, hexane, and pentane. In an analogous manner the equation holding for the differential adsorption heat on coal of the second structural type was derived. For the first type computations of the adsorption heats of different hydrocarbons were carried out (Table 2). For this computation it was necessary for the two structural characteristics Wo, B (Wo', A) of the adsorbent, tabular values on the pressure of the saturated vapour, its mole volume, its parachor, and the thermal coefficient of the volume distribution of the substance to be adsorbed to be known. Finally, an approximative calculation method for the differential heat of the alkanes on adsorbents of the first structural type was worked out. There are 1 figure, 2 tables, and 12 references, 10 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

SUBMITTED: October 24, 1957

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